in the ordinary, followed by a deliberate attempt to massage the clot into the subsidiary, branch. If this failed the operation would be proceeded with on normal lines and the artery opened. It is likely that the alternative method will not always succeed; in the late cases it certainly cannot, but it is worth a trial. I must be very explicit as to my exact meaning, for I think that no greater disservice could be done a patient than a haphazard breaking up of the clot by finger pressure, allowing the resulting smaller emboli to go free in the circulation. We should then have multiplicity and small size of emboli, two factors which I have come to regard as most unfavourable. It is far easier to remove an embolus from the femoral artery than from the posterior tibial, so that if the clot cannot be persuaded into the profunda femoris, for example, it must at once be removed by arteriotomy without for one instant relaxing the clamps or temporary ligatures which are preventing the escape of the clot.

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According to P. Esch (*Zentralbl. f. Gynäk.*, October 27th, 1934, p. 2530), many cases previously described and accepted as osteomalacia have in reality been examples of generalized osteodystrophia fibrosa (von Recklinghausen's Disease). He gives details of two cases in which this mistake had been made; in both, radiological examinations of the skeleton, and in one necropsy, showed the characteristic signs of generalized bony fibrosis, with "brown cysts" in certain bones. The patient who died had adenomata in three parathyroid glands. Distinction between osteomalacia and von Recklinghausen's disease is important: in one of Esch's cases of the latter, removal of one and irradiation of the other ovary had been unnecessarily done for a supposed osteomalacia, and on the other hand successful treatment by parathyroidectomy is possible in some cases of osteodystrophia fibrosa. In diagnosis radiology is the most important measure. The pelvic deformity in von Recklinghausen's disease, if symmetrical, causes marked lateral flattening: the pubis projects forward beakwise, the ascending rami of the pubis are nearly parallel, and the inlet takes the shape of the heart on a playing card. Accepting the view that Paget's disease and von Recklinghausen's disease are different varieties of osteodystrophia fibrosa, Esch points out finally that the non-generalized form of the former may begin in the lumbar vertebrae or the pelvis, so that early cases may come first to the gynaecologist.

RUPTURED SPLEEN AFTER TRIFLING MISHAPS

A RECORD OF TWO CASES

BY

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The cases described below are of interest, owing to the apparently trivial domestic incidents which excited a serious abdominal lesion—that is, a ruptured spleen. These accidents initiated slight but progressive symptoms and physical signs, necessitating splenectomy. Fortunately, judging from the literature, the condition appears to be an uncommon one.

Case I

Frank P., forty-eight hours before admission to hospital, fell against a gas-oven door and bumped his left lower ribs. This accident gave rise to no immediate effects beyond temporary pain. A few hours later he vomited several times and had diarrhoea, but he stated that he saw no blood or slime in the stools. In twelve hours he had developed general abdominal pain, slightly worse in the upper region. After the initial looseness there was no further action of the bowels, so that when he was admitted to hospital he had been constipated for about forty hours.

When I saw him first his general condition was good; he was complaining of abdominal discomfort, but not of definite

FIG. 1.—Shows the transverse incision.

pain. His temperature was 100°, pulse 110, and respirations 20. The abdominal reflexes were normal, and there was no hyperaesthesia. In the right iliac fossa was a visible fullness with a vaguely defined soft swelling; he was tender on pressure here—that is, over the appendix and caecum. He was slightly sensitive over the lower left ribs external to and below the nipple, the point of contact with the oven door, but this was apparently outside the abdominal area. The diagnosis of an atypical acute appendix or "something odd" in the abdomen was made. The possibility of the fall having caused an intra-abdominal traumatic lesion, such as a ruptured spleen, was considered and rejected on account of the seeming slightness of the mishap, and also of the clinical picture.

Immediate operation was advised, and was performed under a percaine spinal anaesthetic. Owing to the element of doubt in the diagnosis, the abdomen was opened through a right paramedian incision centred at the umbilicus. Blood shone through the peritoneum and poured out freely when it was opened. This recalled the abandoned suspicion of a ruptured spleen. The peritoneum was rapidly closed and a transverse incision made through the upper left abdomen (Fig. 1). Through this approach the spleen was easily delivered from its surroundings of blood clot; its vessels were ligatured, and it was quickly removed. On dividing the peritoneum the second time the patient collapsed, became pulseless, and seemed as if he were dead. Intracardiac adrenaline and intravenous saline were administered, and after these his pulse faintly returned. The entire procedure was brief, and while the abdomen was being closed the patient was turned into the Trendelenburg position, extra blankets being tucked around him, and electric stoves placed near by. In an hour's time

he was sufficiently recovered to be levelled up, moved on to his bed, and taken back to the ward. A blood transfusion shortly afterwards established the improvement, and his recovery was uneventful.

The spleen was enlarged to twice its size by several closely adherent layers of thrombus. It was possible to peel these off like the skins of an onion. The surrounding space was filled with a large amount of fluid and clotted blood. Apparently the blow caused a subcapsular injury and haemorrhage, whose waxing and waning stripped up, distended, and ruptured the capsule, forming the laminated perisplenic haematoma.

Deliberating on the sequence of events since, it appears to me that the bleeding from the lacerated spleen irritated the splenic flexure and the descending colon into contraction, thus explaining the diarrhoea. Later, this segment of the bowel became paralysed by aseptic peritonitis, causing partial intestinal obstruction, followed consequently by distension and tenderness of the caecum in the right iliac fossa. It was the latter sign, coupled with the previous history of three weeks' indigestion, which urged the pre-operative diagnosis of acute appendicitis.

Case II

A woman aged 56, while standing on the sill cleaning a window, slipped, and in falling to the floor struck her left side on a chair-seat. She was faint, and felt sick for a time, but continued her duties as a housewife for two days, although admitting that she did not feel well. On the third day she went to bed, owing to weakness and being short of breath. The next day she consulted her doctor, and he sent her to hospital.

FIG. 2.—Shows the incision and the elevation of the loin.

On admission she complained of breathlessness and of pain in the lower part of her left chest, which was worse on coughing and on movement. In addition, for two days she had experienced stomach-ache and constipation. Her temperature was 99°, pulse 110, and respirations 25. She was placid and did not appear to be anaemic. There was a slight bruise over the ninth and tenth ribs at the mid-axillary line, but, apart from impaired resonance at the left base, the chest was considered to be within the normal. A radiograph of the ribs revealed no injury. The abdomen showed moderate generalized tenderness, and some shifting dullness in the flanks. The next and the following day the pulse increased slightly, averaging 120, and the signs were indefinite. When I saw her first on the seventh day after the accident she was much worse, and was undoubtedly very ill; her pallor was striking. The abdomen was distended, visible peristalsis was observed, and at the left upper quadrant was rigidity, tenderness, and dullness. Shifting dullness was still an equivocal physical sign. The haemoglobin was 55 per cent.

The diagnosis of a ruptured spleen was submitted, and confirmed at immediate operation, when the torn organ was removed. The abdomen was filled with blood clot. A transverse abdominal incision was made, and with the bridge of the table raised under her lower ribs as for a gall-bladder operation the exposure was ideal; the entire procedure took fifteen minutes (Fig. 2). She collapsed as the peritoneum was incised, but responded to an immediate intravenous saline and to a blood transfusion two hours later.

An Epitome of the Clinical Picture

This condition—that is, “delayed haemorrhage following traumatic rupture of the spleen”—has recently been very carefully studied by A. H. MacIndoe.¹ With his permission some of his findings are used here. The con-

dition is rare, for he found only forty-five cases in the literature, and reported one of his own.

The Exciting Injury.—This varies from being mild to severe in character. It is usually to the left upper abdomen or to the base of the left side of the thorax. Ruptured spleen from contrecoup is very rare. In chest injuries ruptured spleen complicates fracture of the lower left ribs sufficiently often for the possibility of its occurrence to be always seriously considered. Consequently, these patients should be observed in bed for at least fourteen days. The immediate effect of the accident may be marked temporary shock, grading to almost nothing, so that the patient has forgotten about an injury when questioned a few days later.

Latent Period.—In the article referred to, MacIndoe remarked on the period of “symptomatic silence” after the accident, termed by Baudet the “latent period,” and well illustrated by my second case. Two to eight days is the usual time; it has been as long as six months. Although the term “symptomatic silence” is applied to this interval and patients have continued to work, they usually admitted experiencing a persistent dull left upper abdominal pain, and examination showed slight rigidity as well. Less frequently, slight acceleration of the pulse rate, pallor, weakness, dizziness, or faintness are present.

Symptoms and Signs.—The picture may be a dramatic one, patients exhibiting collapse from a sudden torrential bleeding, as in Case II, or one not so striking, but nevertheless equally serious, where slow, progressive bleeding causes a gradual yet persistent deterioration of health (Case I). Varying degrees of pain in the splenic region are present in every case; my patients experienced it. Further pain is referred to the left shoulder, and is of diagnostic significance. Ballance's sign²—“a dull note in both flanks, but on the right it can be made to shift, whereas on the left it is constant”—and increased splenic dullness are sometimes observed. There is rigidity in the epigastrium, at the left costo-vertebral angle, and below the left costal margin; fullness may be noted in the last area. Appreciation of the tender fullness in the region of the caecum, resulting from inhibition of the colon about the spleen, is important; I have also seen it in a case of torsion of the spleen. It may proceed to centralized distension—that is, from small intestine obstruction—with visible peristalsis (Case II). Signs of pneumonia, pleurisy, or an effusion may be found at the base of the left lung.

Haemorrhage.—Faintness occurs as the bleeding progresses. An abdominal catastrophe with agonizing pain may be precipitated by a large sudden haemorrhage. It sometimes occurs spontaneously, or after a slight strain such as coughing. Great collapse may follow, causing a perforation of a hollow viscus to be suspected, and sudden death has followed. The power of the bleeding usually increases the original damage to the spleen, proceeding to the gross changes, occasionally morcellement, found at operation. It is quite the exception for a splenic wound to heal.

Summary

1. Two cases of ruptured spleen with delayed acute symptoms are described.
2. An epitome of the condition is added.
3. Emphasis is laid on: (a) the possibility of a ruptured spleen occurring with fracture or bruising of the lower left ribs, (b) the significance of persistent left upper abdominal pain and muscular tension after even a trivial injury, and (c) the facility with which splenectomy can be performed through an upper abdominal incision with the loin well elevated (Fig. 1).

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